

CLAIMS

1. An aggregate of PET (polyethylenterephtalate) granules for the manufacture of lightened concrete.
- 5 2. An aggregate according to claim 1, wherein the granules are in the form of flake aggregates.
3. An aggregate according to claim 2, wherein the flakes are produced from recycled PET bottles.
4. An aggregate according to claim 1, which is coated with sand.
- 10 5. A process for the preparation of the aggregate according to claims 1-3, which comprises the following steps:
 - a) reducing PET material into flakes;
 - b) subjecting the PET flakes to a thermal and mechanical process to form flake aggregates;
- 15 6. A process for the preparation of the aggregate according to claim 4, which comprises the following steps:
 - a) reducing PET material into flakes;
 - b) subjecting the PET flakes to a thermal and mechanical process to form flake aggregates;
 - 20 c) coating PET flake aggregates with sand.
7. A process according to claim 6, which comprises:
 - a) providing PET flakes;
 - b) placing the flakes in a ventilated oven and heating to a temperature of 250°C-260 °C, applying a vibratory and rotational mechanical movement, to obtain flake aggregates;
 - 25 c) compressing flake aggregates from step (b), to obtain PET granules;
8. A process according to claim 7, which comprises

- a) providing PET flakes;
- b) placing the flakes in a ventilated oven and heating to a temperature of 250°C-260 °C, applying a vibratory and rotational mechanical movement, to obtain flake aggregates;
- 5 c) compressing flake aggregates from step (b), to obtain PET granules;
- d) subjecting PET granules to surface flaming and rolling the same on sand to obtain aggregates of coated PET granules;
9. PET aggregate obtainable by the process of claim 7 or 8.
- 10 10. The use of a PET aggregate for the preparation of structural or non-structural concrete or materials for building industry.
11. The use according to claim 10 of a PET aggregate coated with sand.
12. Lightened concrete or materials for building industry containing a PET aggregate of claims 1-4 or 9.
- 15 13. A concrete or material for building industry according to claim 13, which is structural and non-structural concrete, self-compacting concrete and thermally and acoustically insulated filling material.